Chemical Biological Incident Response Force

4th Marine Expeditionary Brigade (Anti Terrorism)

Purpose

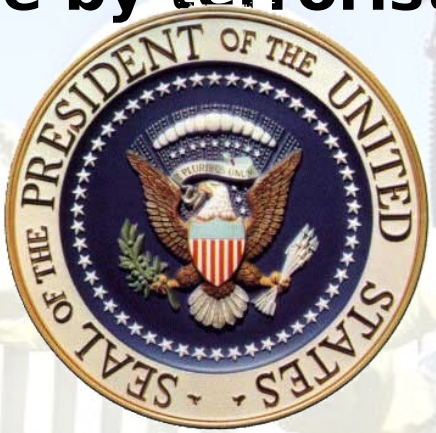
Familiarize the NBC community with CBIRF and some of it's current initiatives.

Agenda

- General Information
- Current Initiatives

Presidential Decision Directive 39

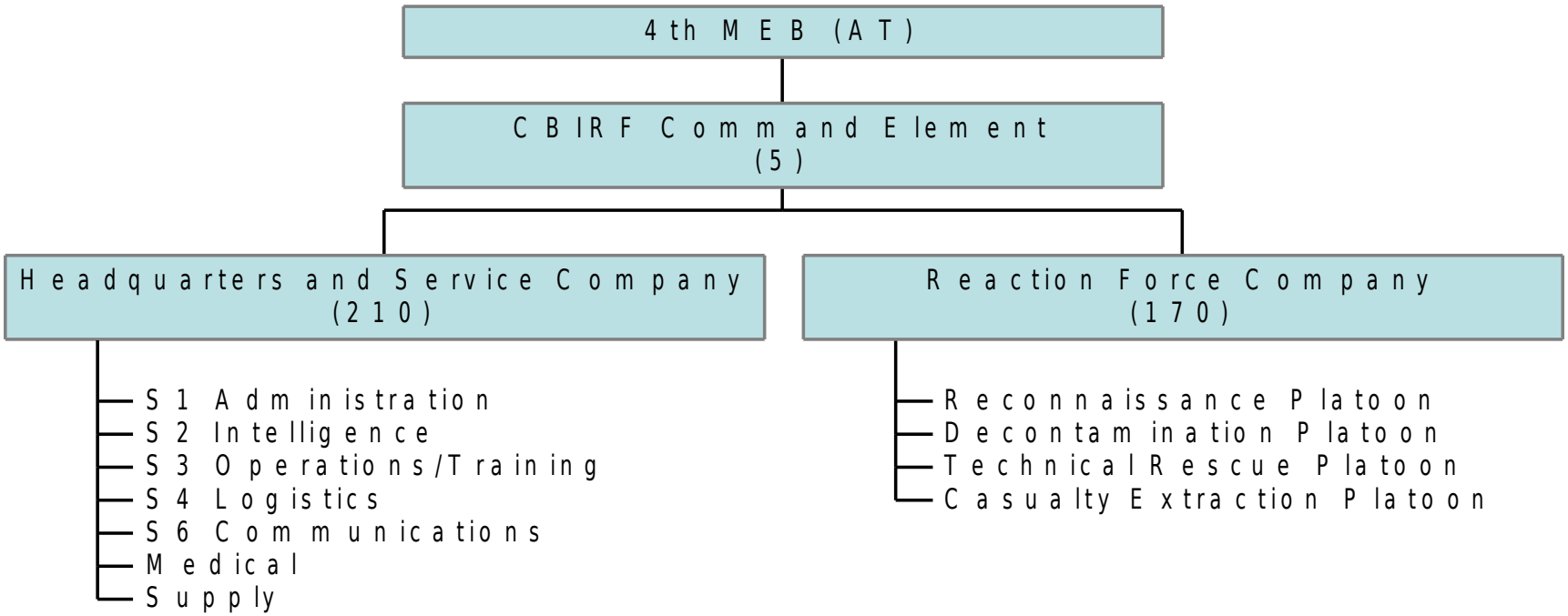
“The United States Shall give the highest priority to developing capabilities to… manage the consequences of nuclear, biological or chemical materials or weapons use by terrorist.”



- **Gen. Krulak pushed CBIRF issue**

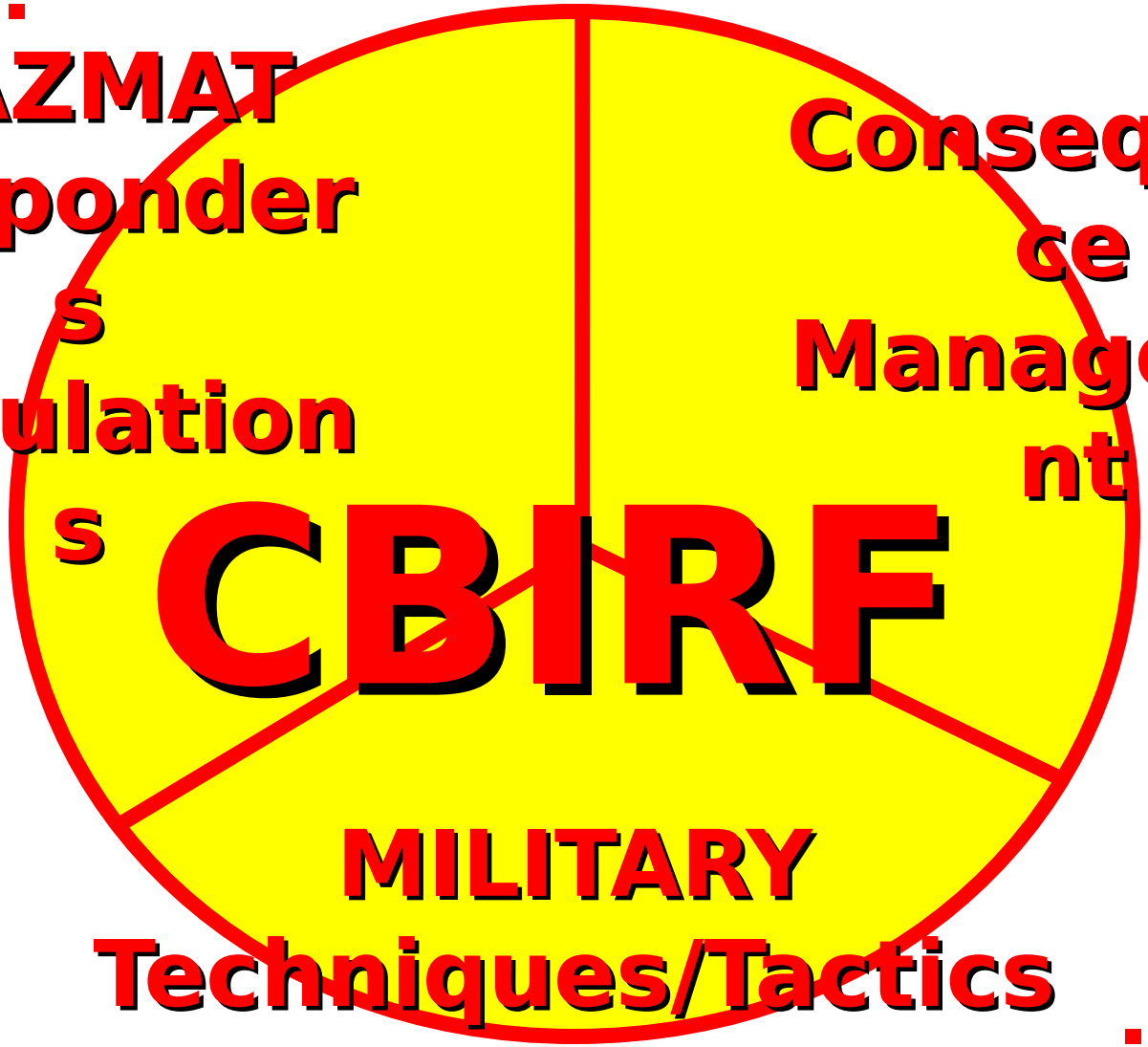
- **NBC personnel replenished**

Administrative Organization



- **civilian contractors**
- **USMC/USN Occupational Fields**

Concept of Ops



Disciplines

Detection and Identification

Personnel Decontamination

Force Protection in CBRNE Environment

Emergency Medical Care and Stabilization

Casualty Search, Rescue and Extraction

Mission Statement

Established April 1996 per CMC planning guidance

"When directed, forward-deploy and/or respond to a credible threat of a chemical, biological, radiological, nuclear, or high yield explosive (CBRNE) incident in order to assist local, state, or federal agencies and **designated Combatant Commanders in the conduct of consequence management operations** by providing capabilities for agent detection and identification; casualty search, rescue, and personnel decontamination; emergency medical care and stabilization of contaminated personnel."

Operational Forces Support

- **Personnel and Equipment**
  - **To the desert 03 and 04**
- **Training**
  - **ENBC**
- **Acquisition**
  - **Latest technology**
  - **Faster process**
  - **MSG (level B suits)**

Current Initiatives

Working with civilian first responder technology and expertise to develop military operational capabilities and techniques

Initiatives

- Improved Filter Protocol
- Detection Capabilities
- Heat Index Calculator
- Improved Level A Ensemble
- First Responder Decision Matrix
- Personal Decontamination Wipe

Improved Filter Protocol

- Protection against Chemical Warfare agents & TIC's.
- Filters tested at realistic human respiration rates of volume & velocity.
  - Cyclic human respiration rates from 50 to a peak of 700 PIAF (Peak Inhalation Air Flows).
- Filter canister failure times in minutes.
- NavAirSysCom and commercial testing of actual Marines' respiration cycles.
- Testing is nearing completion (~87% complete) at Edgewood

Filter Test Overview

- Chemicals to be tested:
  - C2
  - C2A1
  - 3M FR-57
  - 3M FR-64
  - Scott CF32-F2-P3
  - Scott CF32 A2B2E2K2-P3
  - MSA Europe
  - MSA IMP2
  - Consideration given to the SEA 50032

Chemicals to be tested:

–acrolein
–carbon disulfide
–cyanogen chloride (CK)
–cyclohexane
–DMMP
–formaldehyde
–GB
–hydrogen chloride
–hydrogen cyanide (AC)
–methyl mercaptan
–phosgene
–phosphine

Military Applications
Improved Filter Protocol

- Development of a robust filter system which provides protection against a wide range of challenge for a greatly extended period
- Increased flow rate will cause less restrictive breathing and increase overall effectiveness of fighting forces
- Provide commanders with a more realistic method of determining filter break-through times

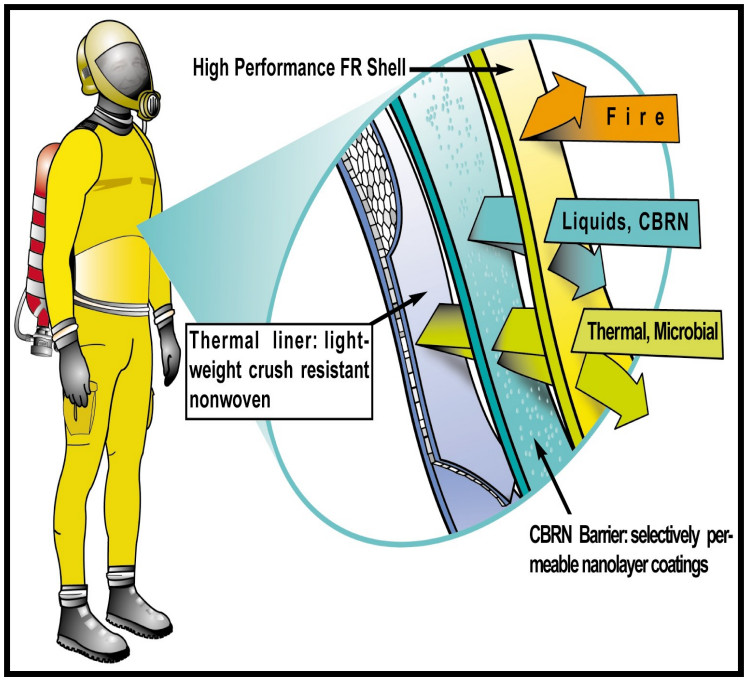
Heat Index Calculator

- PDA configuration.
- Determine Max safe down range times for Responders in PPE.
- Prevent heat related injuries.
- Input for onsite weather conditions, temp, RH & solar load.
- Input for the level of PPE worn.
- Human Physiology thermal testing and evaluation completed with Marines in varying PPE at N.C. State University.
- Currently, Firefighters are undergoing thermal testing and evaluation with varying PPE and Firefighter Turnout Gear at N.C. State University.

Military Applications
Heat Index Calculator

- Ability to predict a maximum work level intensity more accurately
- Ability to tailor operations around Marines
- Provide commanders with a more realistic observation of Troop degradation and battle stresses

Improved Level "A" Ensemble



- Paradigm Shift – Protective factor vice physical description
- Reduce heat related injuries
- Compatible with existing commercial & military PPE – SCBAs, Rebreather, PAPRs & negative pressure masks
- Durable and Fire Retardant Fabrics
- Moisture management & external venting
- Tested against NBC warfare agents and a broad selection of TICS & TIMS

Military Applications
Improved Level "A" Ensemble

- A lighter, thinner, cooler , stronger more durable Chemical Protective Suit
- Protective Suit offering a greater range of protection of not only chemical warfare agents, but also TIC's/TIM's
- Limit combat stress

Responder Decision Matrix

- A PDA leadership tool for proper selection of PPE based on incident-site analysis and input of:
  - agent concentration
  - climatic conditions
  - personal physiology data of responders
- Establish exact failure & breakthrough times of filters & PPE at various respiratory & work rates as well as concentrations of contamination
- Rapidly assess stay time vs. risk to personnel

Responder Decision Matrix

- Integration of NBC Decision Making Tools in PDA Format:
  - JWARN
  - Operational Exposure Guide
  - WMD Related References

Decontamination Wipes

- Provide a “handout” decontamination packet to ambulatory & coherent victims (take decon to the victim)
- Begin the decontamination process w/minimum instruction.
- A mitt or sponge type applicator
- Safe for skin, wounds & mucus membranes
- Color or dye to contrast clean & contaminated areas
- Must neutralize NBC agents or immobilize un-neutralized agent
- Soap & water soluble
- Complete instructions on the external packet
- Replaces the M291 Kit

Points of Contact

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Cmd Brief www.cbirf.usmc.smil.mil

Questions

- **How can CBIRF better support you ?**

CBIRF Partnerships

USAF AFFPBL

DTRA

NGB CST

National Guard Bureau

NMRC-BDRD

NIOSH-CDC

Tech Escort

USCG NSFCC

US EPA ERT

DOE

FBI HMRU

FEMA

U.S. Capitol Police

FDNY

S.F. Fire Dept

Balt. City F.D.

D.C. Fire Dept

NYPD

NBCD Consequence Management

- Consequence Management Operations:
  - **What is it** "Actions which counter effects from Nuclear, Chemical, Biological weapons of mass destruction"
  - CBIRF tasked to assist Base Commands throughout DOD in the development of CM Standards and procedures Military Techniques/Tactics and Procedures of CONUS/OCONUS Operations
  - Marine Corps missions require MOUT Operations, will require changes in military CBRN concepts as well

THE COLD WAR IS OVER

Enhanced NBC Mission

"…. I would like the CBIRF to focus their efforts … on developing countermeasures and force protection training and equipment support packages for deploying MEU (SOC)'s "

General Charles C. Krulak

"…… Continue to March!!!!"

General Michael W. Hagee

Support Of Combat Commanders

- CBIRF CONUS Homeland Mission will slowing shift to National Guard
- CBIRF is focused on lighter, faster, becoming more mobile response force, capable of effectively performing OCONUS mission in direct support of CINC Commanders
- Will retain ability to operate with local officials both in CONUS and abroad

Enhanced NBC Mission

- The E-NBC Set provides the MEF Commanders and MEU (SOC) Commanders with an enhanced CBRNE force protection and a rapid response capability to counter the growing CBRNE threat in strategic areas of interest around the world. This will encompass detecting the threat, identifying the threat, assessing the incident areas, concentration levels, plus assessing and monitoring the incident areas for hazardous materials.

- **CBIRF provides Operational and Exercise Training, as well as refresher training**.

- **Prime Vender provides Specialized Equipment and Maintenance training**

Detection Equipment

- Gaps exist in Marine Corps ability to detect/Identify:
  - TIC/TIM's
  - Radiological Isotopes
  - Effective stand-off detection capabilities
  - Real-Time Biological Detection/Identification capability
- CBIRF assisting in research and development of detection capabilities which can augment current capiblities